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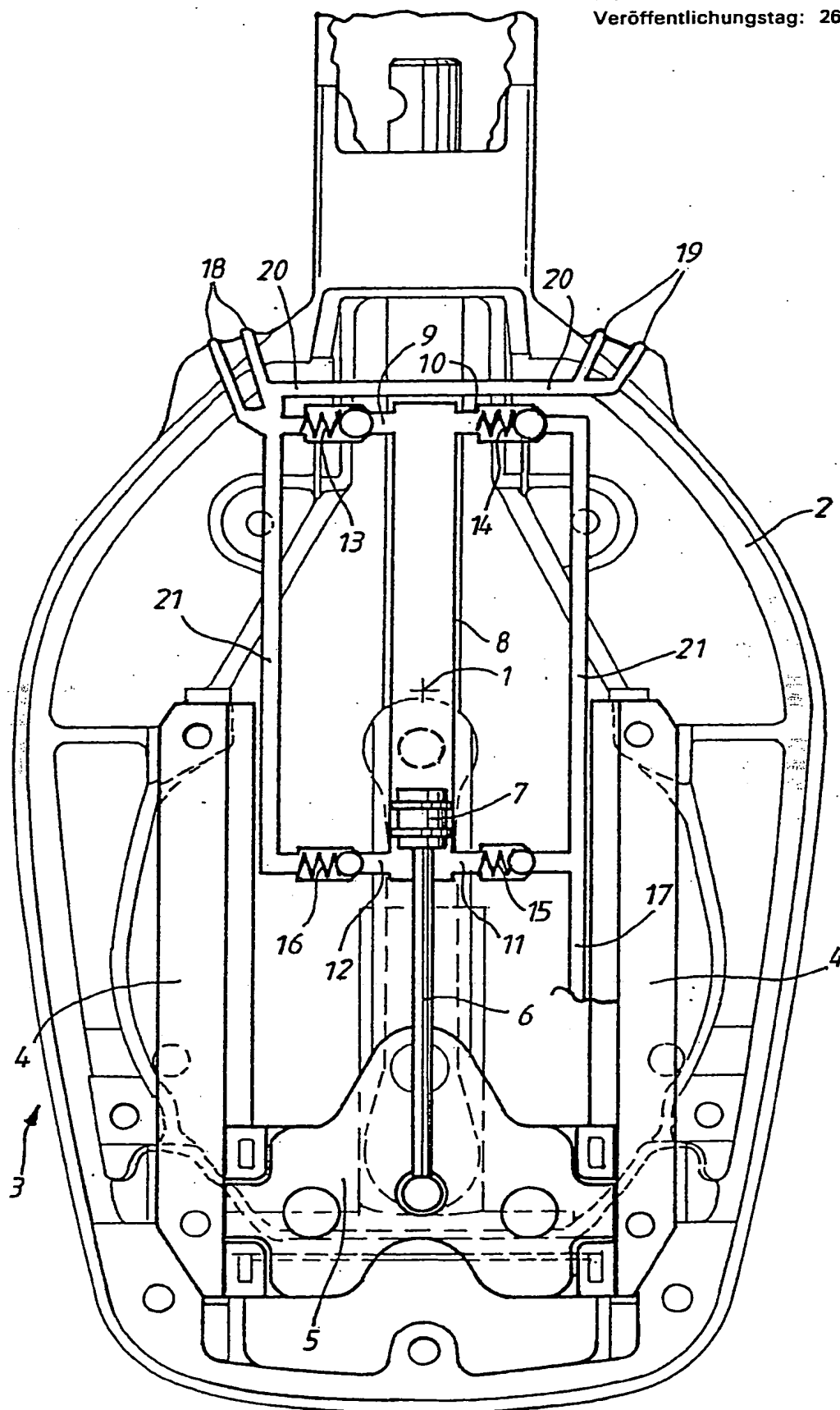
⑤6 Für die Beurteilung der Patentfähigkeit  
in Betracht gezogene Druckschriften:

DE-GM 18 36 936

⑤4 Scheibenwischeranlage für Kraftwagen

In der Anmeldung ist eine Scheibenwischeranlage für Kraftwagen beschrieben, mit einer Scheibenwaschanlage, deren Pumpe durch Bewegungen des Scheibenwischers angetrieben wird. Ein besonders einfacher Pumpenantrieb ist dann möglich, wenn die Scheibenwischeranlage mindestens einen hubgesteuerten Wischerarm aufweist, und wenn die Pumpe über den Hubantrieb des Wischerarmes antreibbar ist.

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Patent Claims

1. Windscreen wiper system for automobiles with a windscreen washing system, of which the pump is actuated by the movements of the windscreen wipers, marked by the fact that, the windscreen wiper system displays at least one wiper-arm, steered by a hub and the pump is operable via the hub steering of the wiper-arm.
2. Windscreen wiper system, according to Claim No. 1, marked by the fact, that the pump is designed as a piston pump and that the piston bar (6) of the piston pump (7) is linearly attached to a gear-component which moves up and down (cross beam 5).
3. Windscreen wiper system, according to Claims 1 and 2, marked by the fact, that the upper and lower parts of the pump cylinder (8) respectively branch off two pipelines for washer fluid ( 9 to 12), which form a ring-shaped pipeline in which respectively unidirectional restrictor valves (13 to 16) are adjusted and in which a feed pipe (17) ends in this ring-shaped pipeline (21) and from this ring-shaped pipeline (21) a pipe (20) ends at the spray nozzles (18,19).

Description

The invention refers to a windscreen wiper system for automobiles with a windscreen washing system, of which the pump is actuated by the movements of the windscreen wipers.

Such a type of windscreen wiper system is known as the German functional prototype document 18.36.936.

The purpose of the present invention was to develop such a known windscreen washer system in such a way, that the operation of the pump shall take place in a very simple way.

(illegible) the operation components for the hub steering are stored, while the kinematics of the operation fundamentally meet the DE-OS 53 24 634.

These operation components include an up and down moving cross beam (5) which are placed in-lateral guiding elements (4) to which a piston bar (6) of a pump piston (7) is attached, which operates together with a pump cylinder (8). At the upper and lower part of the pump cylinder (8) respectively two pipelines for washer fluid 9, 10, 11 and 12 are attached to which respectively unidirectional restrictor valves 13, 14, 15 and 16 are adjusted.

The pipelines for washer fluid 9 to 12 form a ring-shaped pipeline 21 in which a feed pipe (17) ends while the pipeline 21 ends at the other side at a pipe 20 which leads to the spray nozzles (18,19).

The mode of operation of the pumping system is as follows:

When the pump piston 7 moves upward, the washing fluid in the pump cylinder 8 is pumped via the pipelines for washer fluid 9 and the restrictor valve 13 to the spray nozzles 18, 19. At the same time, the restrictor valves 15 and 16 shut down, while from the lower part of the restrictor valve 15 the washing fluid is sucked into the pump cylinder 8.

At the following movement of the pump piston 7 downward, the washing fluid, which has been sucked out last, is pumped via the opening restrictor valve 16, the ring-shaped pipe 21 and the pipe 20 to the spray nozzles 18, 19. At this stage the restrictor valves 13, 15 close, while from the upper part of the restrictor valve 14 the washing fluid is sucked into the pump cylinder 8.

Such a type of windscreen wiper system is known as the German functional prototype document 18.36.936.

The purpose of the present invention was to develop such an existing windscreen washer system in such a way, that the operation of the pump shall take place in a very simple way.

This purpose is solved by the invention of a windscreen wiper system of the same type, which is equipped with at least one wiper-arm, steered by a hub while the pump can be operated through a hub operation of the wiper-arm.

In order to achieve an especially compact and sturdy construction, an additional suggestion is made to design the pump as a piston pump while the piston bar shall be adjusted to a gear construction which can move linearly up and down.

As a further development of the invention for the flow steering, the recommendation was made that at the under part of the pump cylinder respectively two washing fluid pipes shall branch off, forming a ring-shaped pipe in which respectively adjacent parallel restrictor valves shall be adjusted and a feed pipe shall end at the ring-shaped pipe and from the ring-shaped pipe a pipe shall end in the spray nozzles.

The object of the invention shall be schematically displayed as a designed sample.

The picture shows a top view of an open operation head of a one-armed windscreen wiper, which is operated by a hub.

